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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/638,606

08/15/2000

Sean P. Burns

GIO-007-US

1629

7590

09/25/2006

L.C. BEGIN & ASSOCIATES, PLLC.
510 HIGHLAND AVENUE
PMB 403
MILFORD, MI 48381-1586

EXAMINER

GELLNER, JEFFREY L

ART UNIT

PAPER NUMBER

3643

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/638,606

Applicant(s)

BURNS ET AL.

Examiner

Jeffrey L. Gellner

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3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-21, 23, 25, 27, 29, 31 and 34-47 is/are pending in the application.
- 4a) Of the above claim(s) 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21, 23, 25, 27, 29, 31 and 34-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21, 23, 25, 27, 29, 31, and 34-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poole (US 5,139,588; document E on the 892 accompanying the office action that is paper no. 10) in view of Pacanowsky et al. (US 3,993,514).

As to claims 21, 23, 25, 27, 29, 31, 34, and 40-47, Poole et al. ('588) discloses a vehicle occupant restraint system (abstract) comprising an inflatable air bag (inherent in abstract); a gas generator (col. 6 lines 39-65) for inflating the air bag; a nitrogen-containing, non azide gas generant ("tetrazole" of col. 5 lines 3-4) composition within the gas generator that forms nitrogen oxide or dioxide upon combustion (from col. 8 lines 39-50). Not disclosed is a selective noncatalytic reducing compound, ammonium salt, is placed with the gas generant composition, wherein at least one mol of ammonium sulfate is added per mol of nitrogen oxide or nitrogen dioxide produced upon combustion of the gas generant composition. Pacanowsky et al, however, disclose the use of ammonium sulfate with a non-azide gas generant (col. 3 lines 1-8). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poole et al. ('588) by adding a non-catalytic reducing compound of ammonium sulfate as disclosed by Pacanowsky et al. so as to change to reduce the flame

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temperature (Pacanowsky et al. at col. 3 lines 1-8) and to have at least one mol of ammonium sulfate is added per mol of nitrogen oxide or nitrogen dioxide produced upon combustion of the gas generant composition depending upon the flame temperature desired.

As to claim 35, Poole et al. ('588) and Pacanowsky et al. further disclose compression molding (for example, col. 9, example 1 of Poole et al. ('588)) and NO_x gas produced upon combustion (col. 8, lines 39-47 of Poole et al. ('588)). Not disclosed are extrusion into a desirable shape, at least one mole of elemental N per mole of NO_x, and the reducing compound discretely interspersed about the gas generant composition. Pacanowsky et al., however, discloses the reducing compound discretely interspersed about the gas generant composition (col. 4 lines 53-68). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the system of Poole et al. ('588) as modified by Pacanowsky et al. by interspersing as disclosed by Pacanowsky et al. so as to optimize reaction rates and to extrude the composition into a desired shape so as to make the system more useable and to have at least one mole of elemental N per mole of NO_x depending upon needs of the system.

As to claim 36, Poole et al. ('588) and Pacanowsky et al. further disclose tetrazole (col. 6 lines 39-46 of Poole et al. ('588)), alkaline earth metal lanthanide (col. 6 lines 47-51 of Poole et al. ('588)), a low temperature slag of clay (col. 6 lines 58-65 of Poole et al. ('588)). Not disclosed are extrusion into a desirable shape, at least one mole of elemental N per mole of NO_x, and the reducing compound discretely interspersed about the gas generant composition. Pacanowsky et al., however, discloses the reducing compound discretely interspersed about the gas generant composition (col. 4 lines 53-68). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the system of Poole et al. ('588) as

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modified by Pacanowsky et al. by interspersing as disclosed by Pacanowsky et al. so as to optimize reaction rates and to extrude the composition into a desired shape so as to make the system more useable and to have at least one mole of elemental N per mole of NO_x depending upon needs of the system.

As to claims 37-39, Poole et al. ('588) and Pacanowsky et al. further disclose nitrogen oxide and nitrogen dioxide (from "oxides of nitrogen (NO_x)" of col. 2 lines 6-12 of Poole et al. ('588)). Not disclosed is the reducing compound proximate to and discretely interspersed about the gas generant composition. Pacanowsky et al., however, discloses the reducing compound discretely interspersed about the gas generant composition (col. 4 lines 53-68). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the system of Poole et al. ('588) as modified by Pacanowsky et al. by interspersing as disclosed by Pacanowsky et al. so as to optimize reaction rates and to have the reducing compound proximate to the gas generant composition to add more reducing compound so as to further cool the system.

Response to Arguments

Applicant's arguments filed 26 June 2006 have been fully considered but they are not persuasive. Applicants' arguments are: (1) neither Poole et al. ('588) nor Pacanowsky et al. disclose a discrete selectively non-catalytic reducing (SNCR) agent, ammonium sulfate, and a separate gas generant composition; (Remarks page 1, 1st para.); and, (2) Pacanowsky et al. does not describe the use of ammonium sulfate as a discrete nitrogen compound but instead within the composition which would attenuate the affects of acceleration (Remarks page 10, 1st para.).

As to arguments (1) and (2), Examiner considers Pacanowsky et al. to disclose ammonium sulfate with a separate gas generation composition (see for example, col. 4 lines 63-68 of Pacanowsky et al.). The ammonium sulfate in either the Poole et al. ('588) composition or the Pacanowsky et al. composition would function, in part, as a selectively non-catalytic reducing (SNCR) agent because it is well decided that if a composition is physically the same, it must have the same properties (see MPEP 2112.01(II)). Pacanowsky et al. discloses that ammonium sulfate functions to both reduce the effect of acceleration on burn characteristics of a composition and to reduce flame temperature of the composition (Pacanowsky et al. at col. 3 lines 1-8). Examiner considers ammonium sulfate to have a third effect - acting as a discrete SNCR agent.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

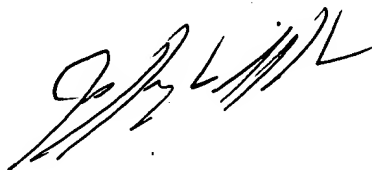
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey L. Gellner whose telephone number is 571.272.6887. The examiner can normally be reached on Monday-Friday, 8:30-4:00, alternate.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon can be reached on 571.272.6891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeffrey L. Gellner
Primary Examiner
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